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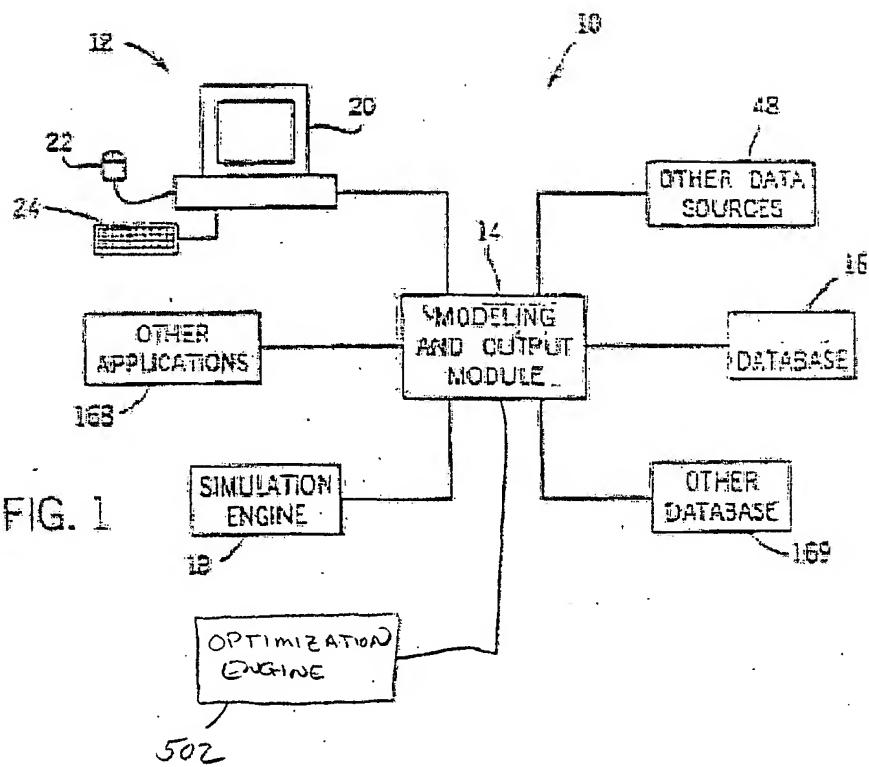
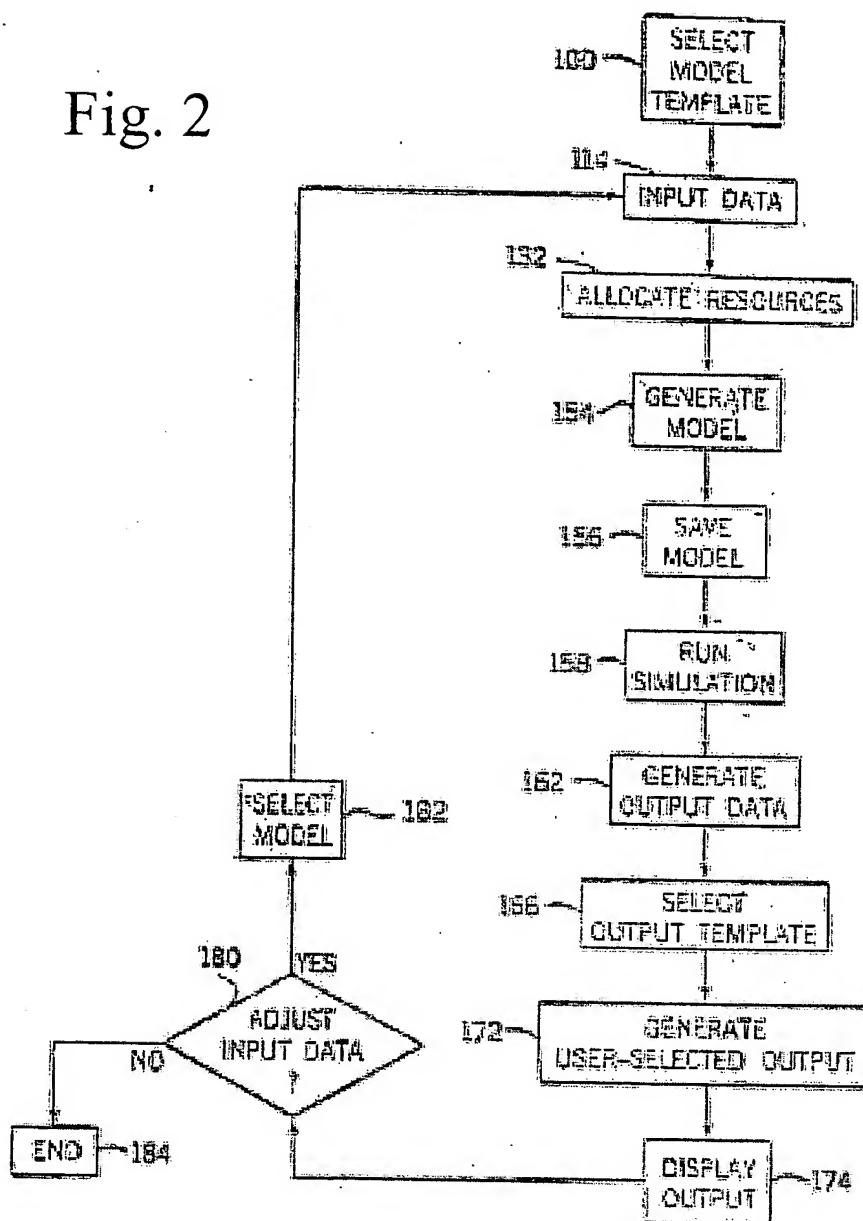
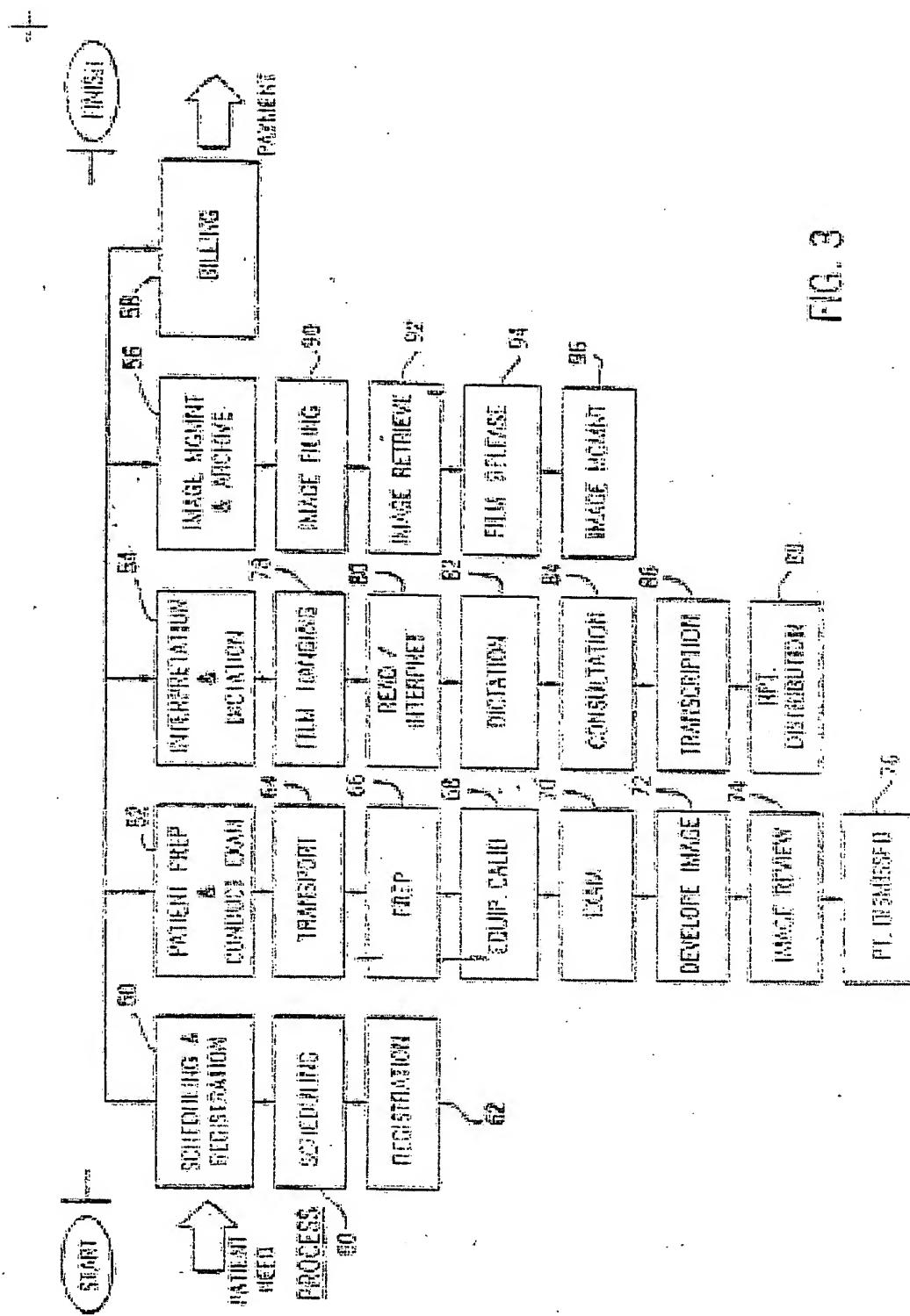


Fig. 2





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Fig. 4

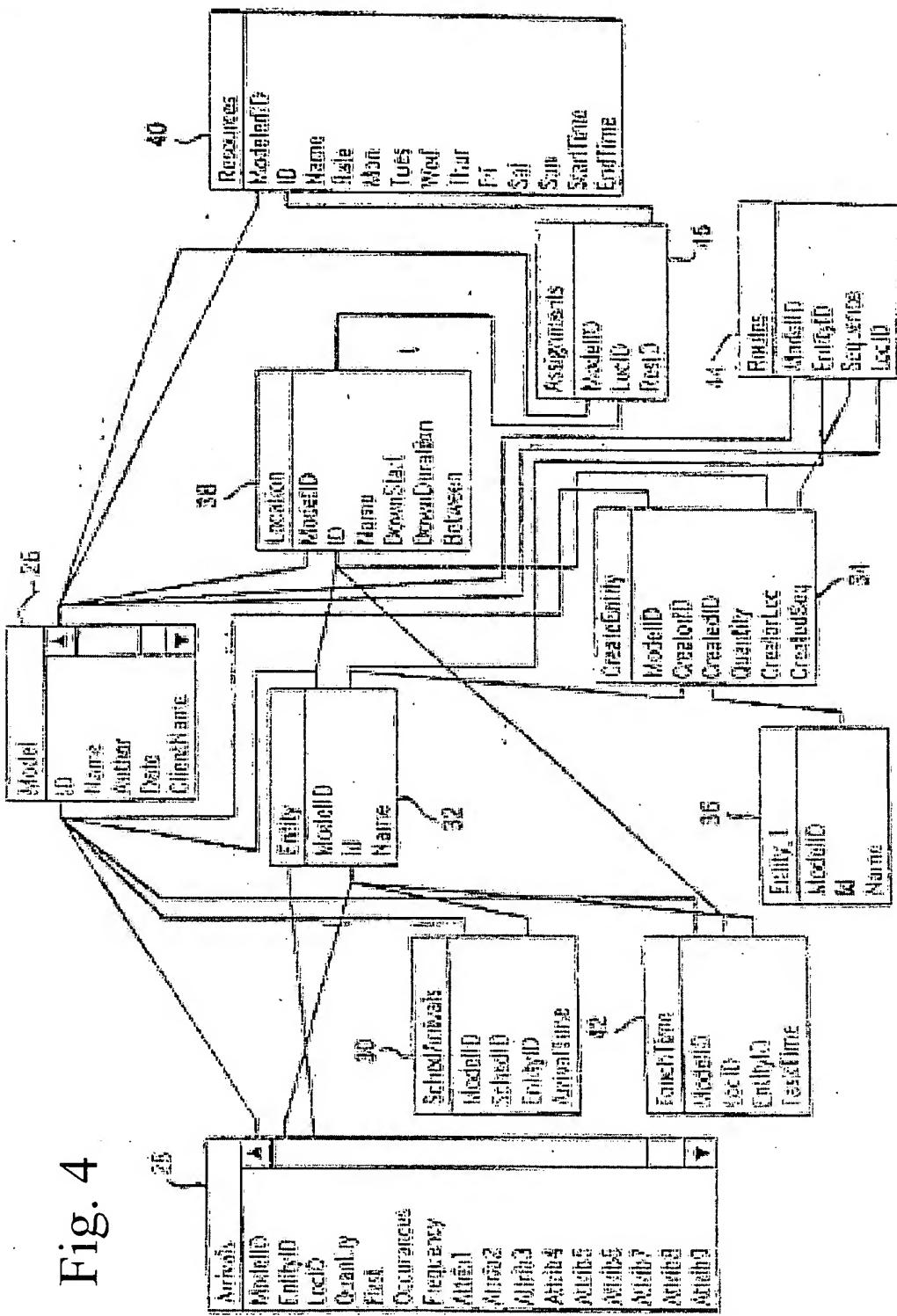
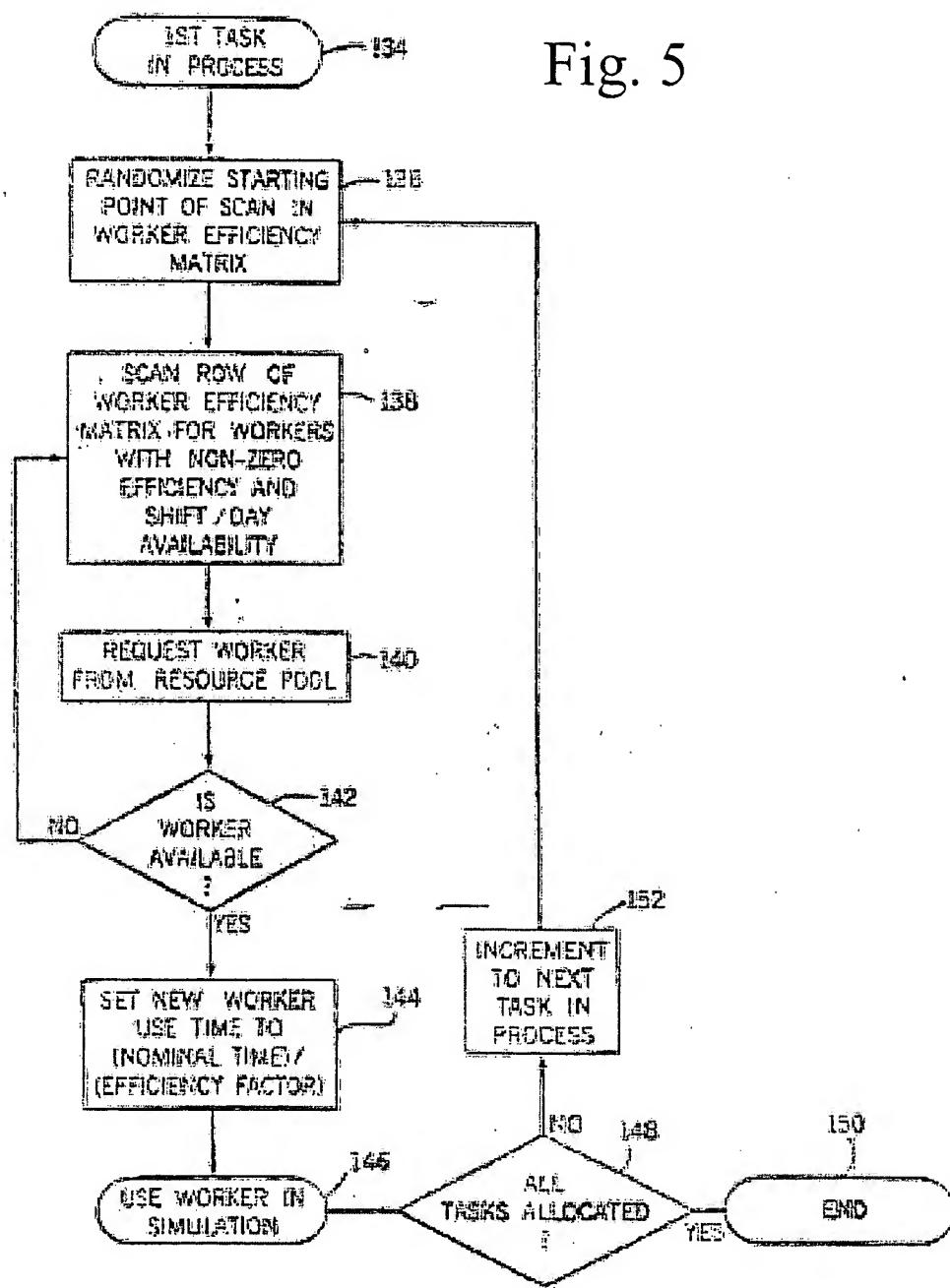


Fig. 5



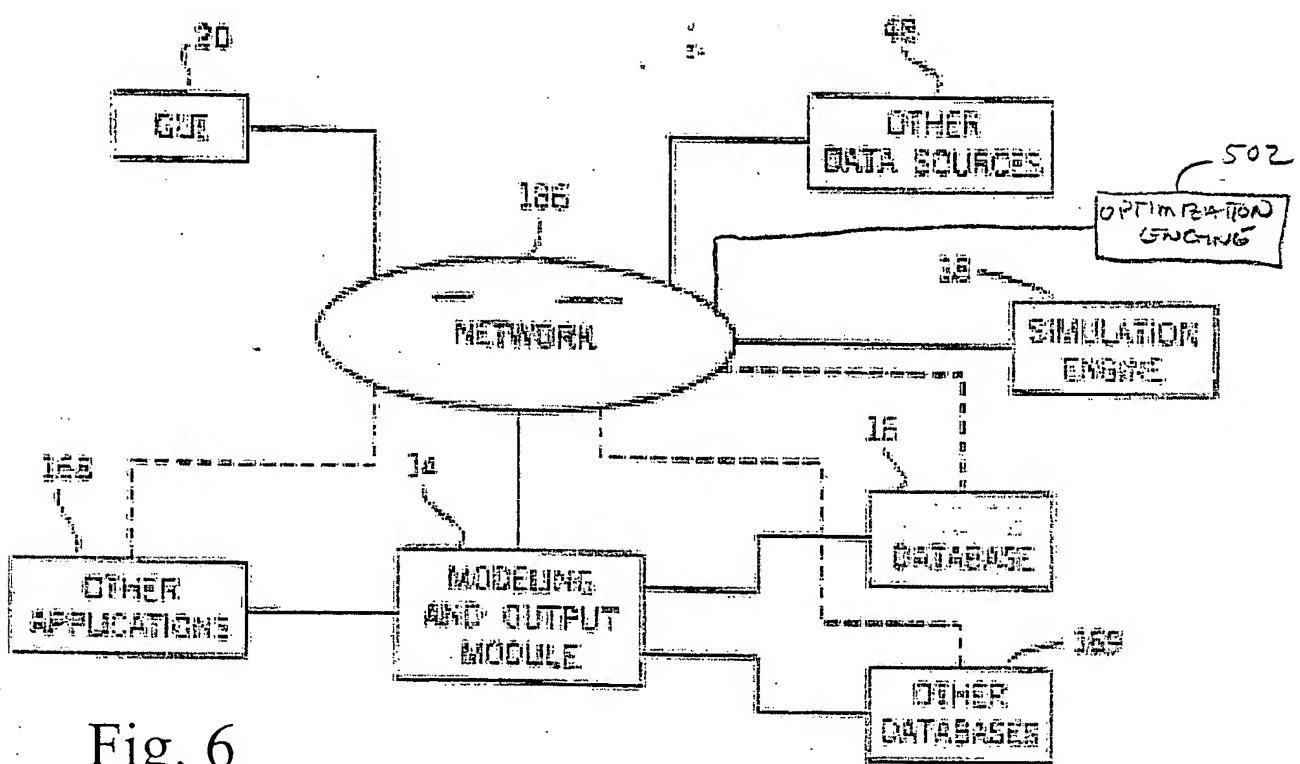


Fig. 6

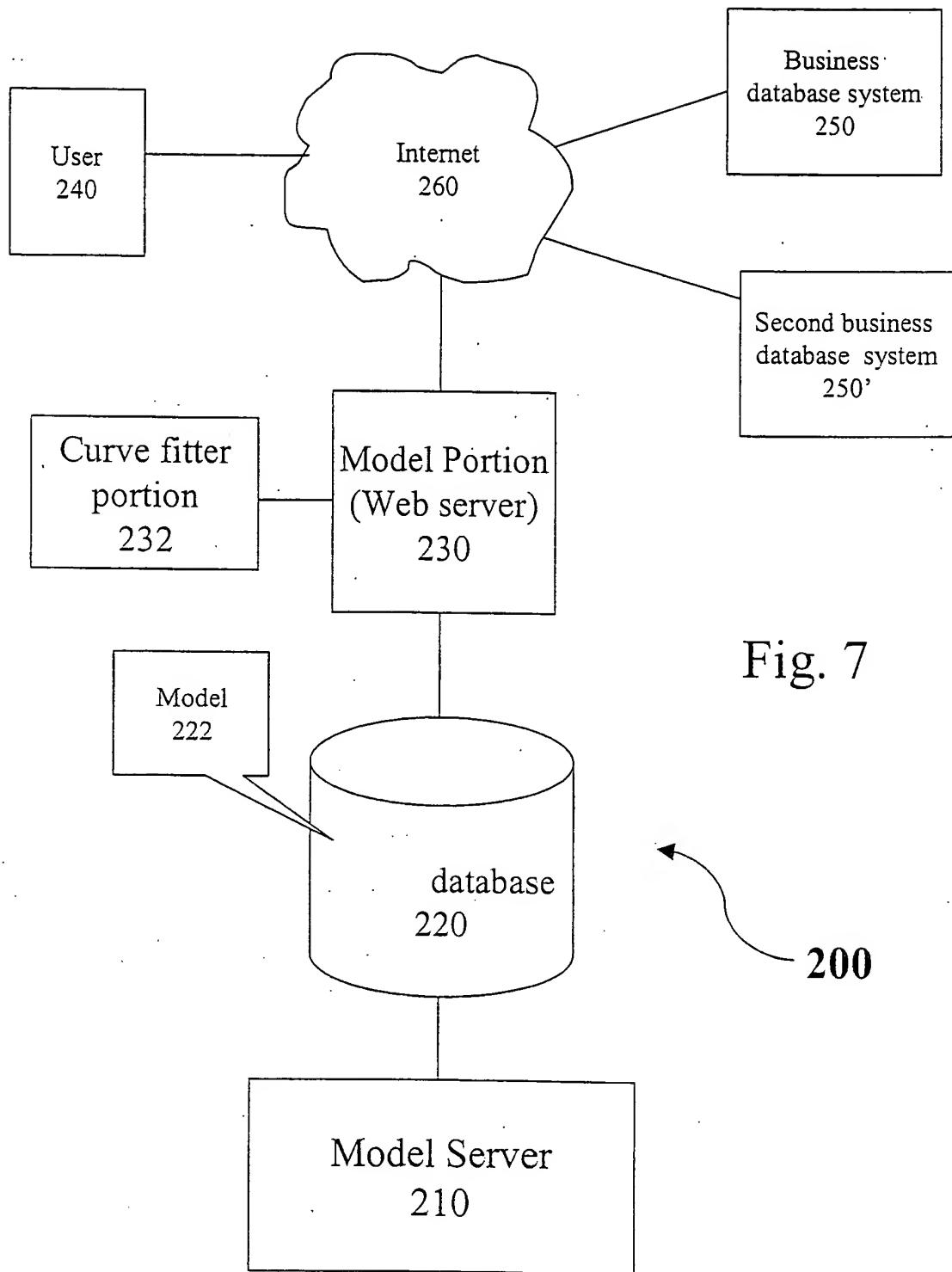
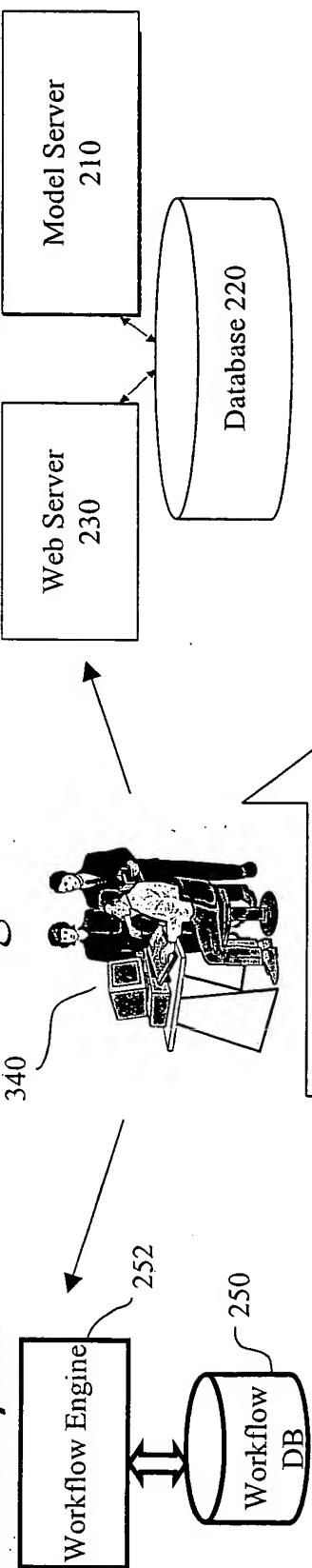


Fig. 7

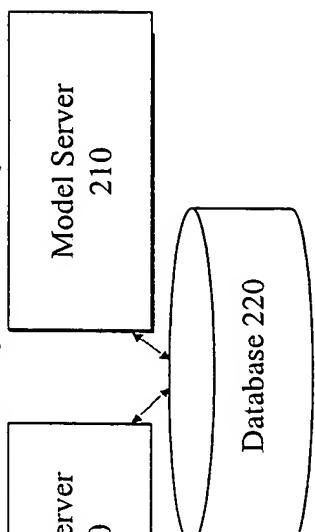
## Workflow System

Fig. 8



## Business System Analysis

Fig. 8



### Workflow system contains:

- Schema - process steps states
- Types - work objects
- Roles & groups
- Assignments
- Event logs

### Digitized system is interrogated

### Business Modeling system has:

- Process steps / locations
- Work objects - entities
- Roles & groups
- Assignments
- Workflow routes & process times
- Demand profiles

### Source can be combination of different business systems:

- Financial
- CRM
- Sales
- Accounts Receivable
- ERP

### Automatically Extract System data to Integrate digitized business system with analysis & decision support technology

- Automating system model build and updating (automated distribution curve fitting)

- Can be integrated with business & economic forecasting system

### Features:

- Build & Maintain process capability and analysis knowledge repository.
- Analyze & Control Capability... What-if's scenarios, Strategy Comparisons
- Business Analytics, Forecasting, Planning

- Maintain digital system links for accurate historical demand patterns and processing times.

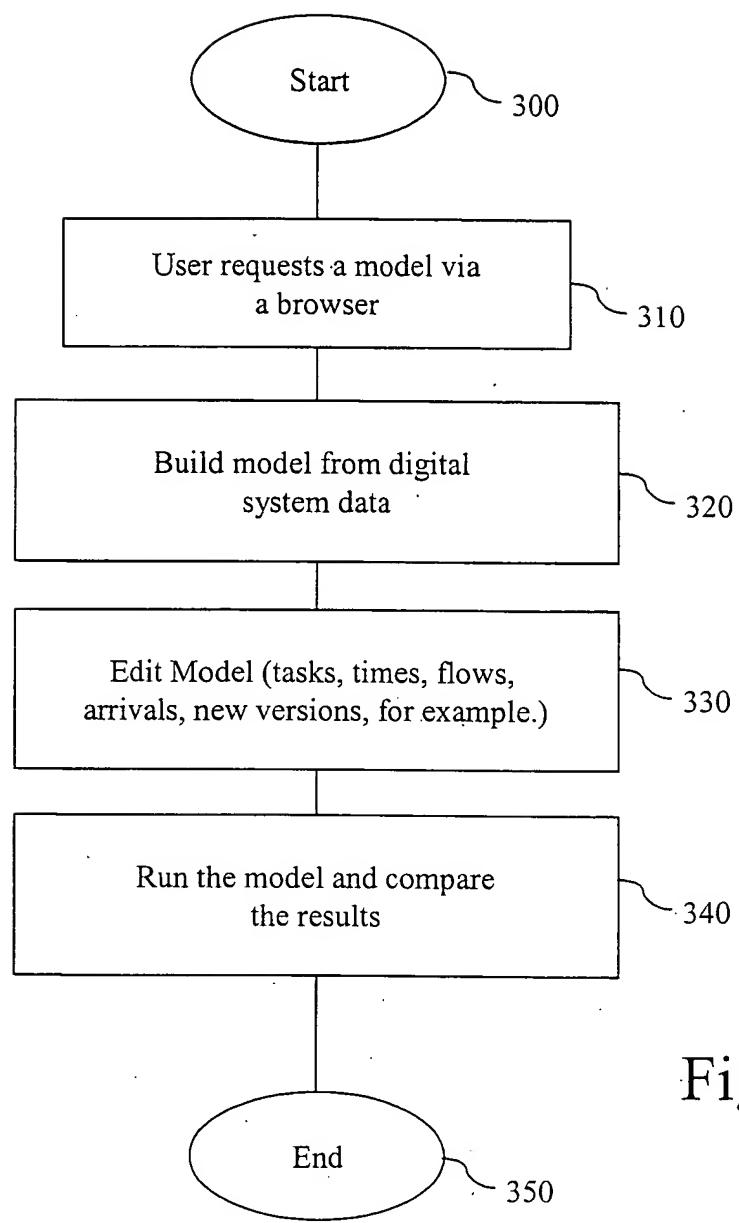


Fig. 9

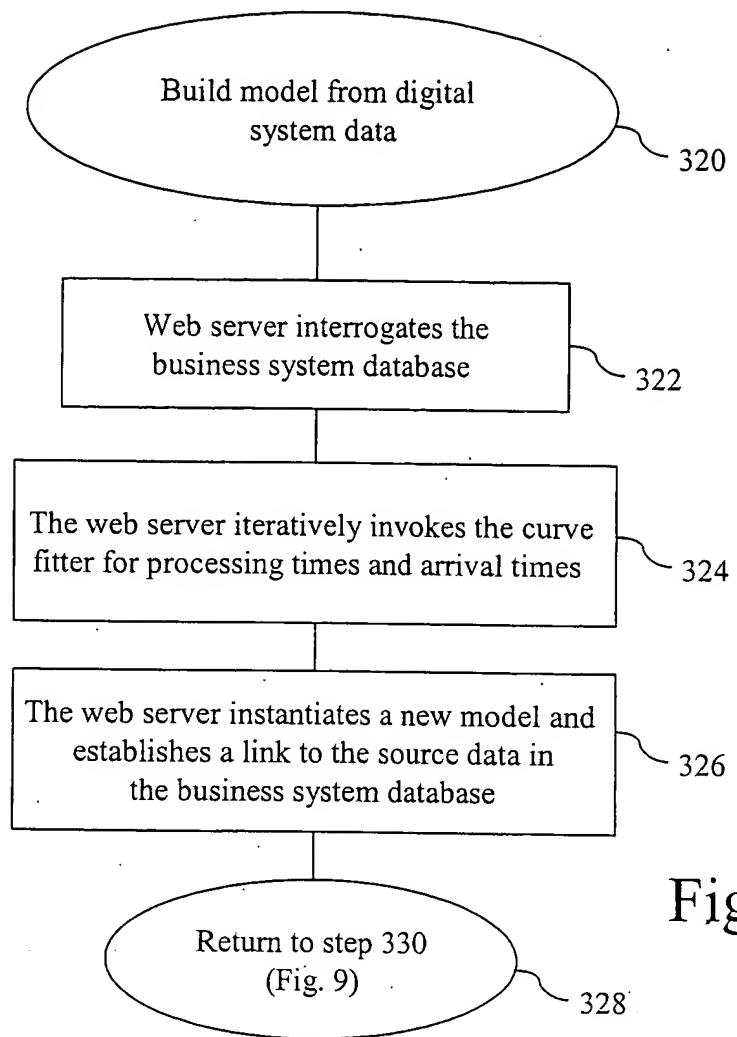


Fig. 10

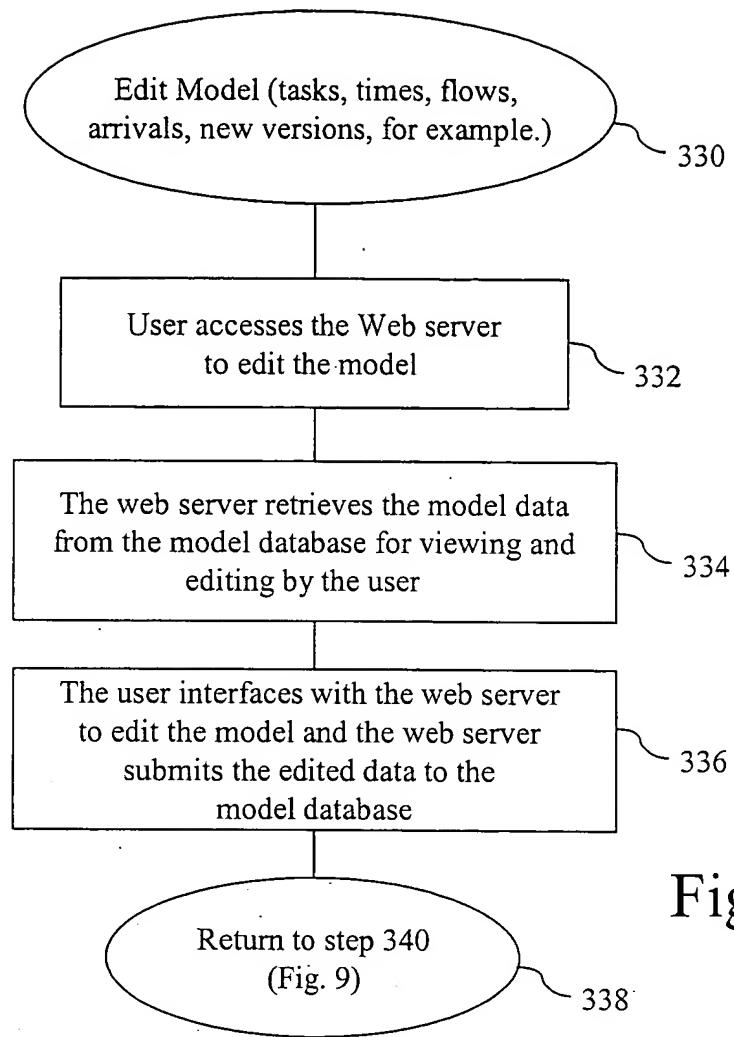


Fig. 11

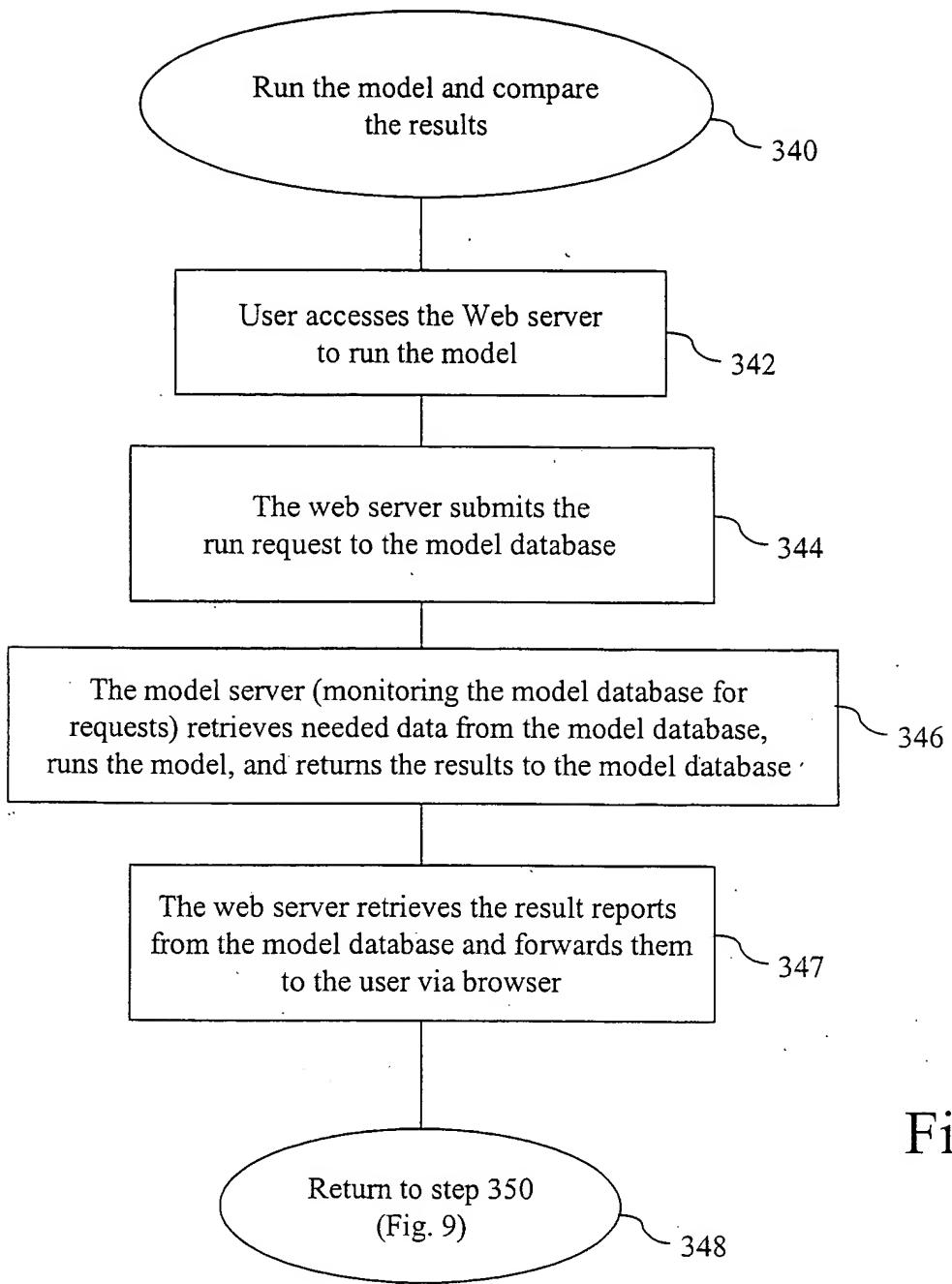


Fig. 12

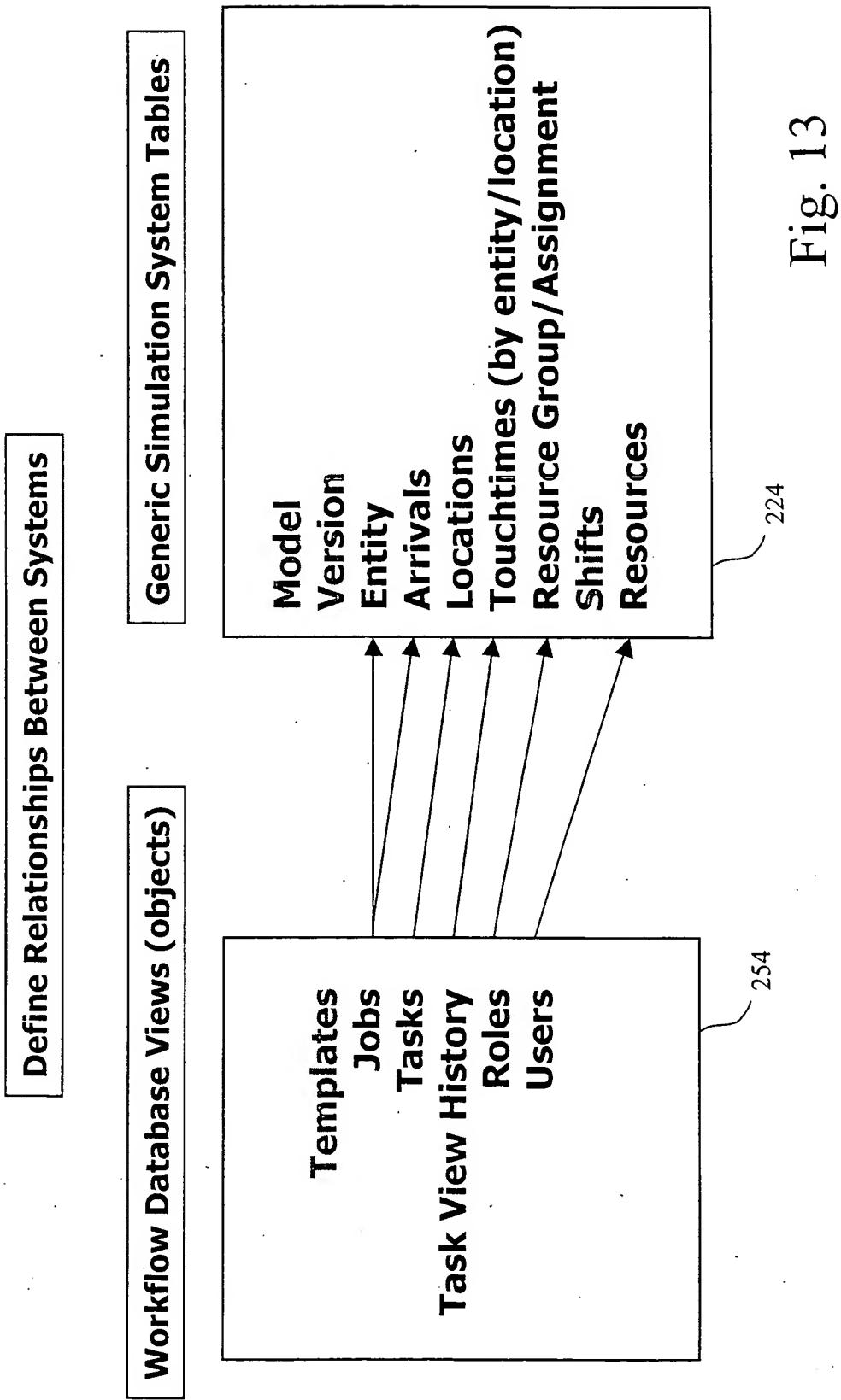
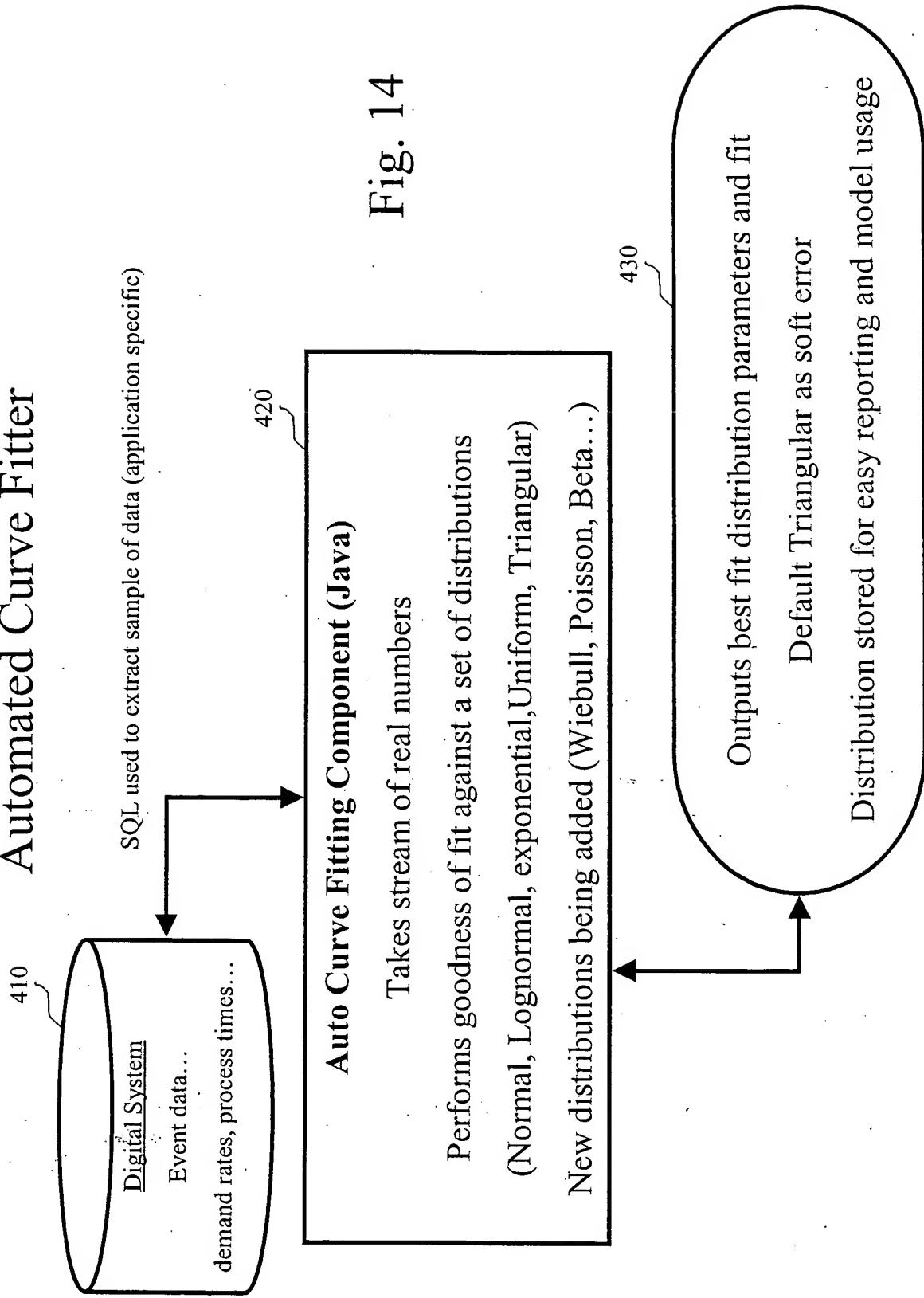


Fig. 13

## Automated Curve Fitter





## Process steps 310, 332, 342

### How does this tool help?

[Click here to find out](#)

### See a Demo

[View a real case scenario using CT/MR Optimizer](#)

The Generic Business System Process Modelling System allows process owners and quality leaders the ability to test their business system's performance under a variety of conditions. This WEB based dynamic modeling technology will allow businesses to construct and save a variety of business system workflow alternatives and test system performance under a broad range of conditions.

Below are listed the models and templates currently defined in the system.

Select either an existing model (to modify) or a template (new model creation) and a version number to proceed to the next step.

**COMING SOON** - Models may be created and updated from digital workflow system such as TIBCO and eMatrix. This will allow more accurate process time and arrival rate distributions to easily and automatically be incorporated into your business critical process simulations.  
[Preliminary version](#) →

[Click to generate model from workflow data](#)

Model List	Version	Template List	Version
<a href="#">Mays New Model with right sequence</a>	<a href="#">1</a>	<a href="#">CT_Template</a>	<a href="#">View</a>
<a href="#">Mei2</a>	<a href="#">2</a>		<a href="#">Create New Model</a>
<a href="#">Z-EC_ScanIndexFieldsPR</a>			
<a href="#">test EURO claims build</a>			
<b>Model Description</b>			
Testing workflow model create			

Fig. 16

Auto Generate a process model based on historical workflow data

Generated list of workflow

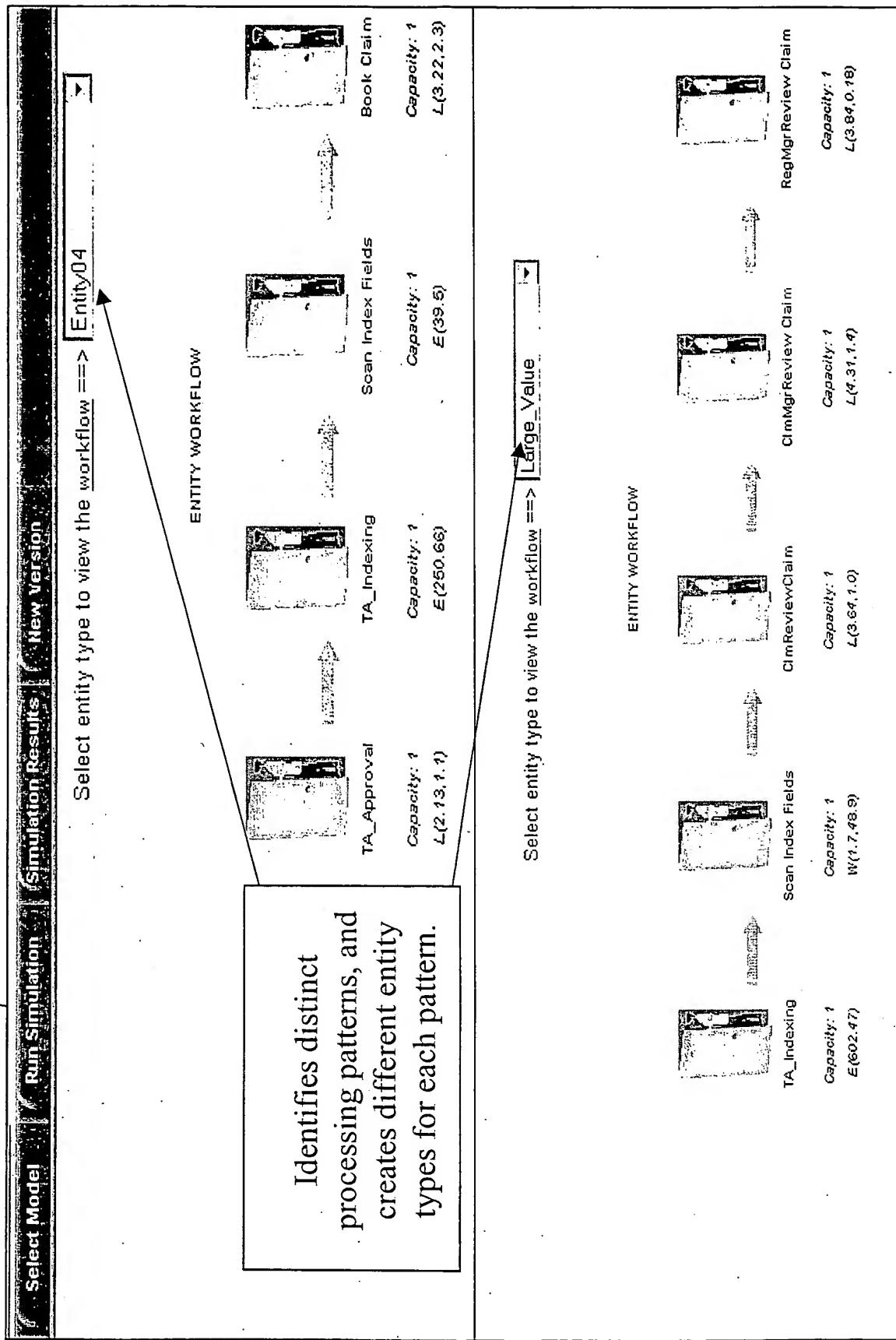
Specify a unique name for the new model: <input type="text" value="ZEC_ScanIndexFieldsPR"/>	Give a description of the new model: <input type="text" value="Testing workflow model create"/>
Select a workflow: <input type="checkbox" value="CA_CashAlloc_WorkFlow"/> <input type="checkbox" value="EB_DealApproval"/> <input type="checkbox" value="EC_ScanIndexFields"/> <input checked="" type="checkbox" value="EC_ScanIndexFieldsPR"/> <input type="checkbox" value="ERC_ADMIN_TEST_EDM_START1"/> <input type="checkbox" value="TAC_ACCOUNTING_PD"/> <input type="checkbox" value="TAC_BORDEREUX_PD"/> <input type="checkbox" value="TAC_FACBOOKING_PD"/> <input type="checkbox" value="TAC_XLBOOKING_PD"/> <input type="checkbox" value="UKCLAIMS_SETUP"/>	Select the time period of the workflow you are interested in (format=MM-DD-YYYY): From: <input type="text" value="01-01-2001"/> To: <input type="text" value="04-01-2001"/> <input type="checkbox" value="Show detailed output"/>
<input type="button" value="CreateModel"/> <input type="button" value="Close"/>	

Fig. 17

Process step 320

Process steps 330, 334

18  
Fig.



Model elements can easily be added and edited

Model Id	Model Name	Version
211	Z-EC_ScanIndexFieldsPR	1

Model information page; Only name, version number and description can be updated using this page. This page should be accessible from any point in the modeling process. This page should appear when a model is loaded from the database. You can select models from the database.

Model name:	Z-EC_ScanIndexFields	Version number:	1
Number of entities	8	Number of arrivals	0
Number of resources	0	Number of resource groups	0
Number of process steps	10	Number of assignments.	0
Number of workflows	32	Last modified	Scheduled Arrivals

You can edit the model description or create another model using this model as a starting point or template by changing the name or version number and pressing the update button. This will create a new instance of the model that you can make changes to while saving the current model for future reference.

Model description: Testing workflow model create

Update | Done

Process step 336

Fig. 19

### Edit entities (add, delete and change names)

Model Id	Model Name	Version
211	ZEC_ScanIndexFieldsPR	1

Build list of system entities :

Add new entities to the list or change the name of an entity in the list.

	Add New	Change Name
Entity03	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Entity04	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Entity05	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Entity06	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Rejected_ByReview	<input type="button" value="Delete"/>	

Model Info

Fig. 20

Process step 336

**Edit resources (add, delete, schedule and change names)**

**Process step 336**

<table border="1"> <tr> <td>Model Id</td> <td>Model Name</td> <td>Version</td> </tr> <tr> <td>211</td> <td>Z-EC_ScanIndexFieldsPR</td> <td>1</td> </tr> </table>	Model Id	Model Name	Version	211	Z-EC_ScanIndexFieldsPR	1	<p>Build a list of system resources : Add new resources to the list or change a resource in the list.</p> <p>Name: <input type="text" value="DataEntry_1"/></p> <p>Cost per Hr: <input type="text" value="0"/></p> <p><input type="button" value="Add New"/> <input type="button" value="Update"/></p> <p><input type="button" value="DataEntry_1"/></p>	<p>Set resource Schedule CAN THIS BE DONE WITH A GRAPHIC CONTROL?</p> <p>Scheduled Days:</p> <p><input checked="" type="checkbox"/> Monday <input checked="" type="checkbox"/> Tuesday <input checked="" type="checkbox"/> Wednesday <input checked="" type="checkbox"/> Thursday <input checked="" type="checkbox"/> Friday  <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday</p> <p>Scheduled Hours:</p> <p>From: <input type="text" value="8"/> <input type="button" value="AM"/> To: <input type="text" value="5"/> <input type="button" value="PM"/> <input type="button" value="▼"/></p> <p><input type="checkbox"/> FirstShift</p> <p><input type="button" value="Delete"/> <input type="button" value="Add New Schedule"/> <input type="button" value="Apply"/> <input type="button" value="Delete"/> <input type="button" value="Add New Schedule"/> <input type="button" value="Apply"/> <input type="button" value="Delete"/></p>	<p>ModelInfo</p> <p><input type="button" value="Apply"/> <input type="button" value="Done"/></p>
Model Id	Model Name	Version							
211	Z-EC_ScanIndexFieldsPR	1							

**Fig. 21**

NOTE: Schedules should be defined for both resources and operations or tasks on this page. Schedules can be selected and assigned to process steps on the process step page. Define schedules to reflect the actual availability of the resources and tasks.

### Group resources for task assignments

Model Id	Model Name	Version
203	Claims	2

Place resources into **groups** based on the tasks that they will perform.

Data Entry 1	Group Name: <input type="text" value="Adjudicate"/>
Data Entry 2	<input type="button" value="Add Group"/>
ADJ 1	<input type="button" value="Update Group"/>
ADJ 2	
ADJ 3	

Model info

<input type="button" value="Apply"/>	<input type="button" value="Done"/>
--------------------------------------	-------------------------------------

Process step 336

Fig. 22

Model Id	Model Name	Version
203	Claims	2

Define jobs that individuals in this resource group can perform in this model.

Assign first working step in job:	How many of this resource?	Resource Group:	Assign last working step in job:
At step:	<input type="button" value="Data Entry"/>	<input type="button" value="1"/>	<input type="button" value="Data Entry"/>
Modelinfo	Current Job Assignment List		
At Data Entry, 1 Data Entry works until task at Data Entry is completed.			
<input type="button" value="Remove job def"/> <input type="button" value="Apply"/>			
<input type="button" value="Group resources for task assignments"/>			

Fig. 23

Process step 336

### Process steps (add, delete and modify)

Model Id	Model Name	Version
211	Z-EC_ScanIndexFieldsPR	1

Build a list of system process steps : Add new process steps to the list or change a process in the list.

Name: <u>Scan Index Fields</u>	capacity: <u>1</u>	cost per use: <u>0</u>	Set Process Downtime: <u>Set Downtime</u>
<u>Add Before</u> <u>Add After</u> <u>Change Selected</u>		<u>First Time:</u> <u>0</u>	
		Duration: <u>0</u>	<u>Time Between:</u> <u>0</u>
<u>TA_Indexing</u> <u>Scan Index Fields</u> <b>▼</b> <u>CmReviewClaim</u> <u>CmMgrReview Claim</u> <u>Delete</u>			

Modelinfo

Apply Done

**Process step 336**

Fig. 24

Change arrival patterns (Number & frequency)

Model Id	Model Name	Version
203	Claims	2

Arrivals describe the entry pattern of entities into the business process from an external source.

Entity	Arrives at Process Step	Qty. Each	First Time	Occurrences	Frequency
SL Claim	Arrival_Q	1			

Add Arrival | Update | Del Arrival

SL Claim At Arrival\_Q 15 0 INF 168 HR  
SL Claim At Arrival\_Q 15 24 INF 168 HR  
SL Claim At Arrival\_Q 15 48 INF 168 HR  
SL Claim At Arrival\_Q 15 72 INF 168 HR  
SL Claim At Arrival\_Q 15 96 INF 168 HR

Model info

Apply | Done

Process step 336

Fig. 25

Change process flow and processing times with the workflow screen

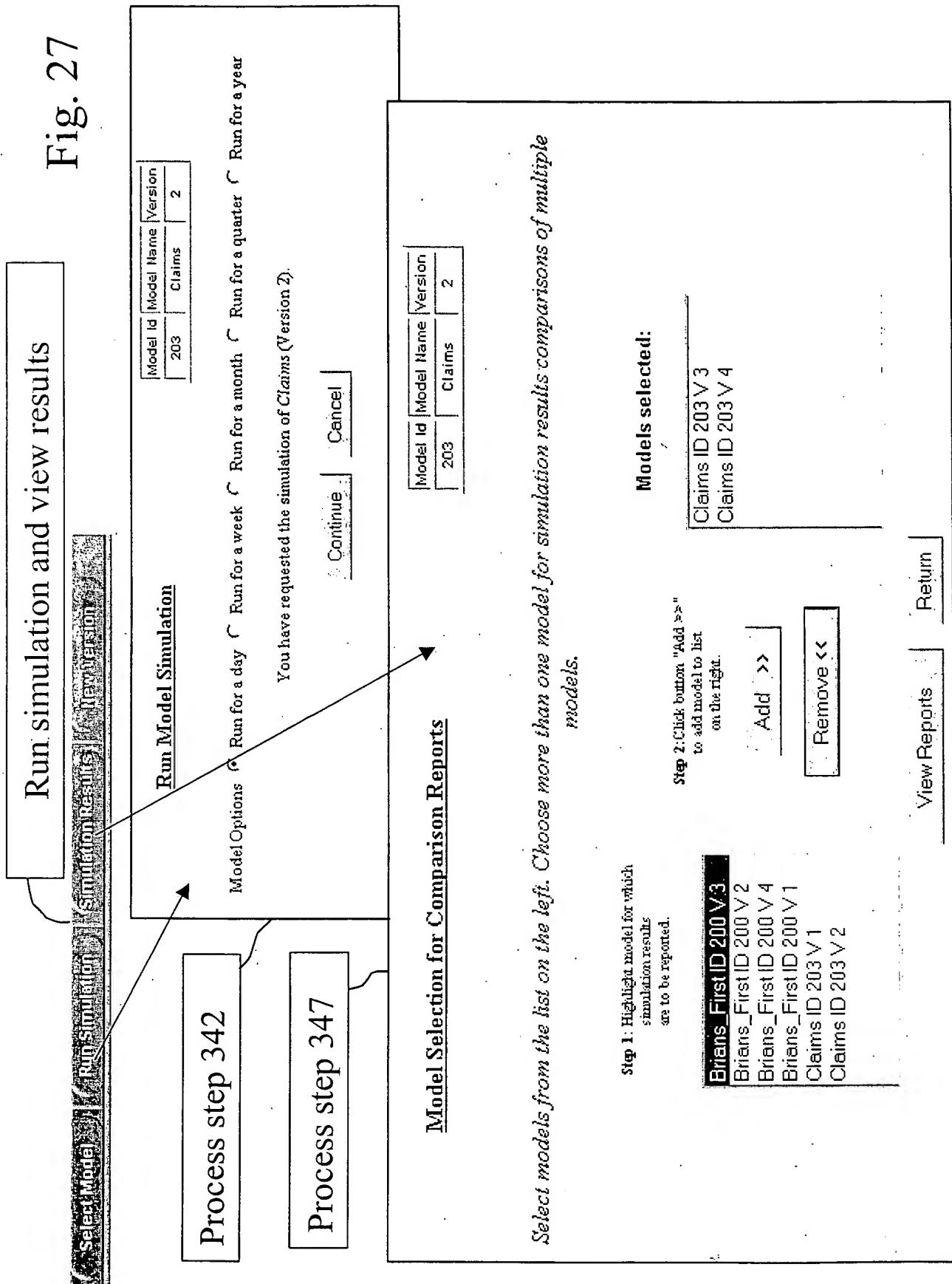
Model Id	Model Name	Version
2411	Z:EC_ScanIndexFieldsPR	1
Build Workflow for Entity: Large_Value		
Enter the processing Time:	Add Before	Add After
Select a process step:	<ul style="list-style-type: none"><li>TA_Indexing L(4.31.1.4) <input type="button" value="Update"/></li><li>Scan Index Fields</li><li>ClmReviewClaim</li><li>ClmMgrReviewClaim</li><li>RegMgrReview Claim L(4.31.1.4)</li><li>WorkFlow generated time distributions:</li><li>Set Time</li><li>Delete</li></ul>	
Model Info		

Process step 336

Fig. 26

## Run simulation and view results

Fig. 27



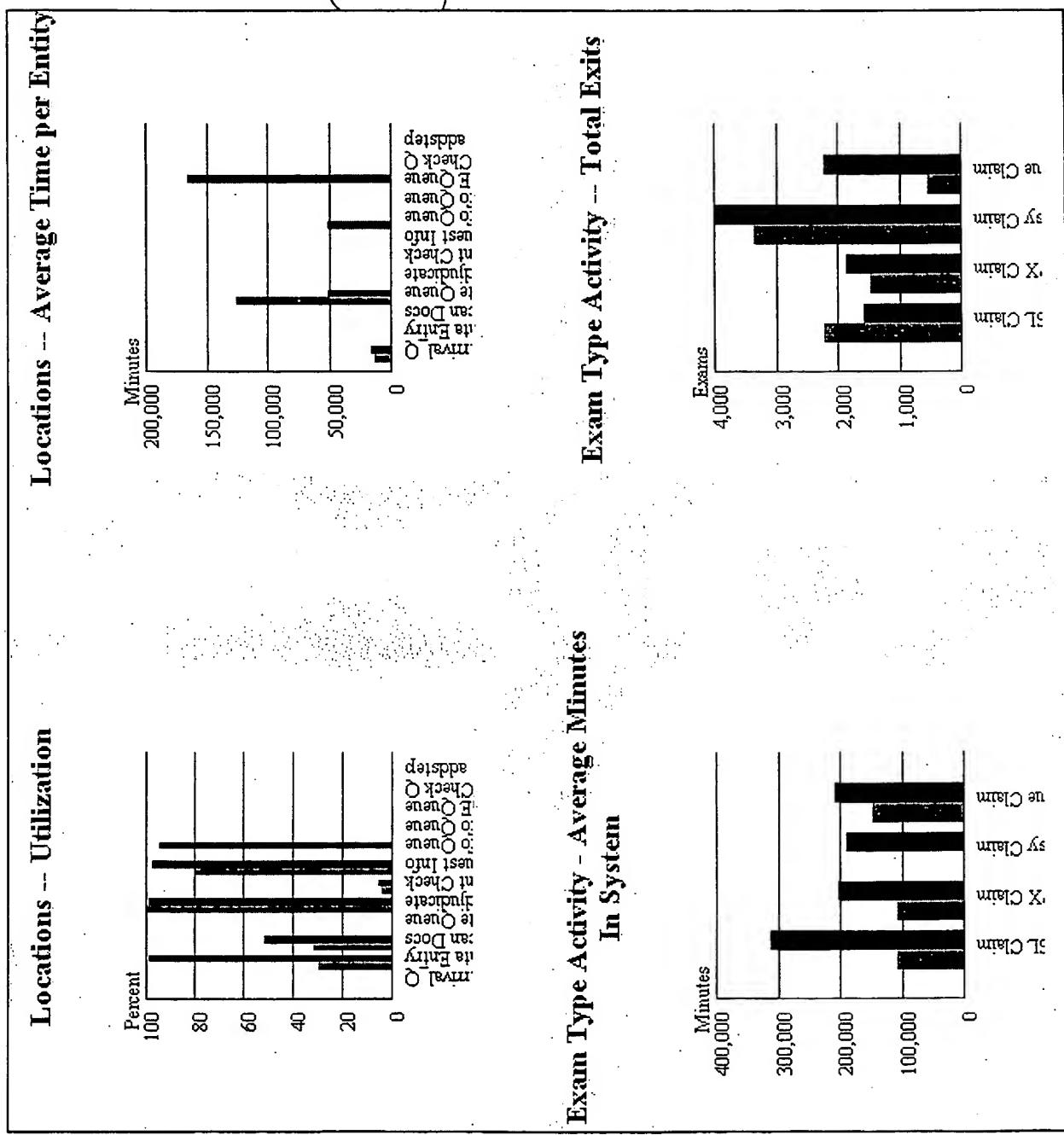
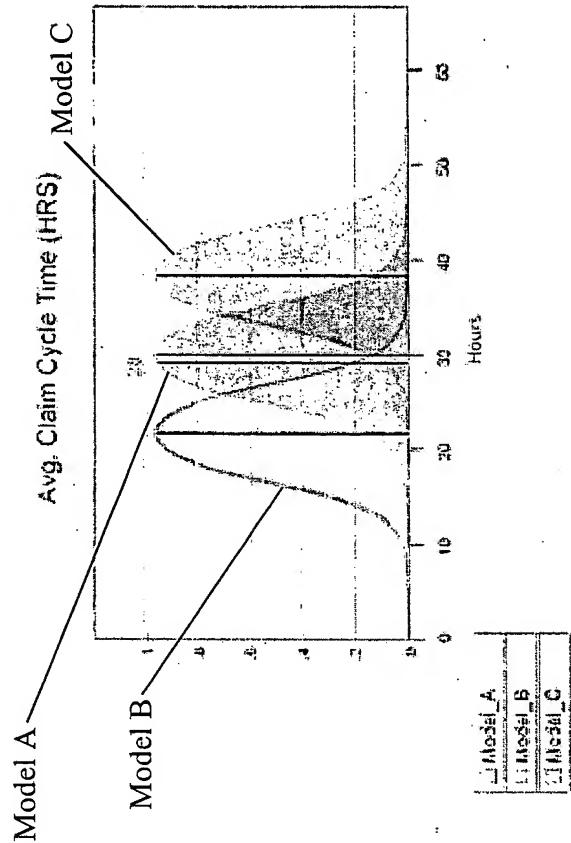


Fig. 28

## Entity Cycle Time report

This report communicates the average time a work object spends in your system. The data being displayed represents the range of possible results given the input assumptions for your business system. The variability in the models result is function of the variability and inter dependencies of the various model input assumptions (arrival rates, resource availability, processing times...).



Process step 347

Fig. 29

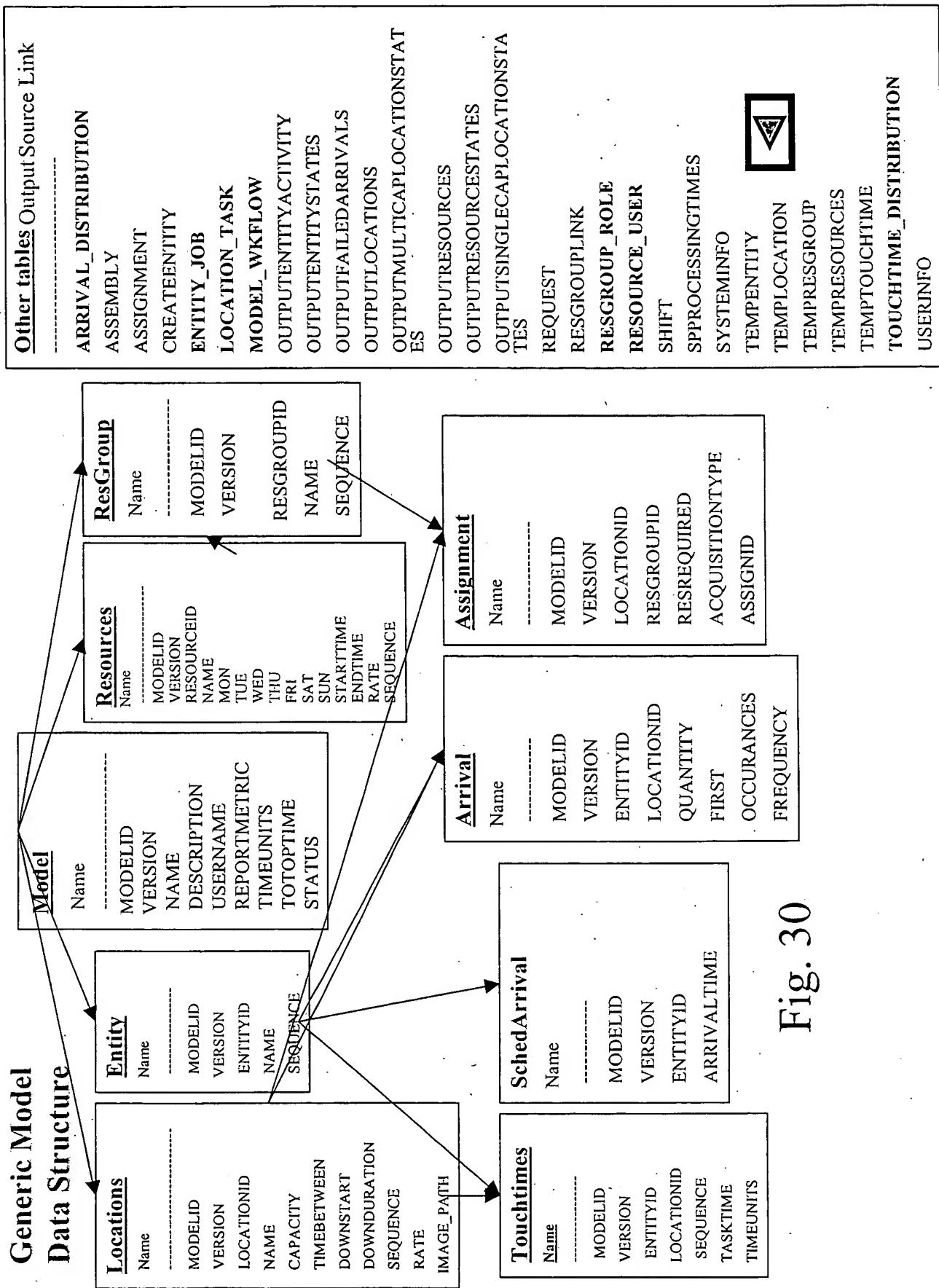


Fig. 30

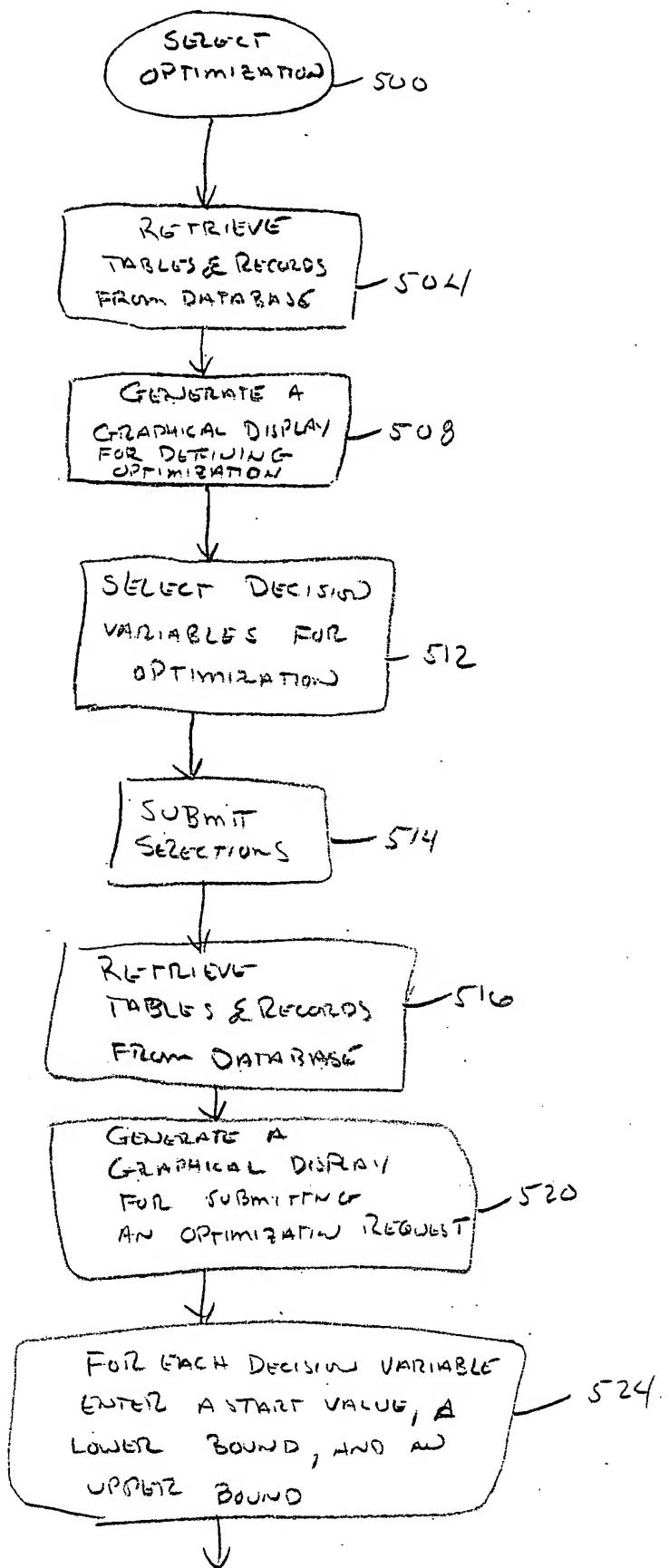


FIG. 31 A

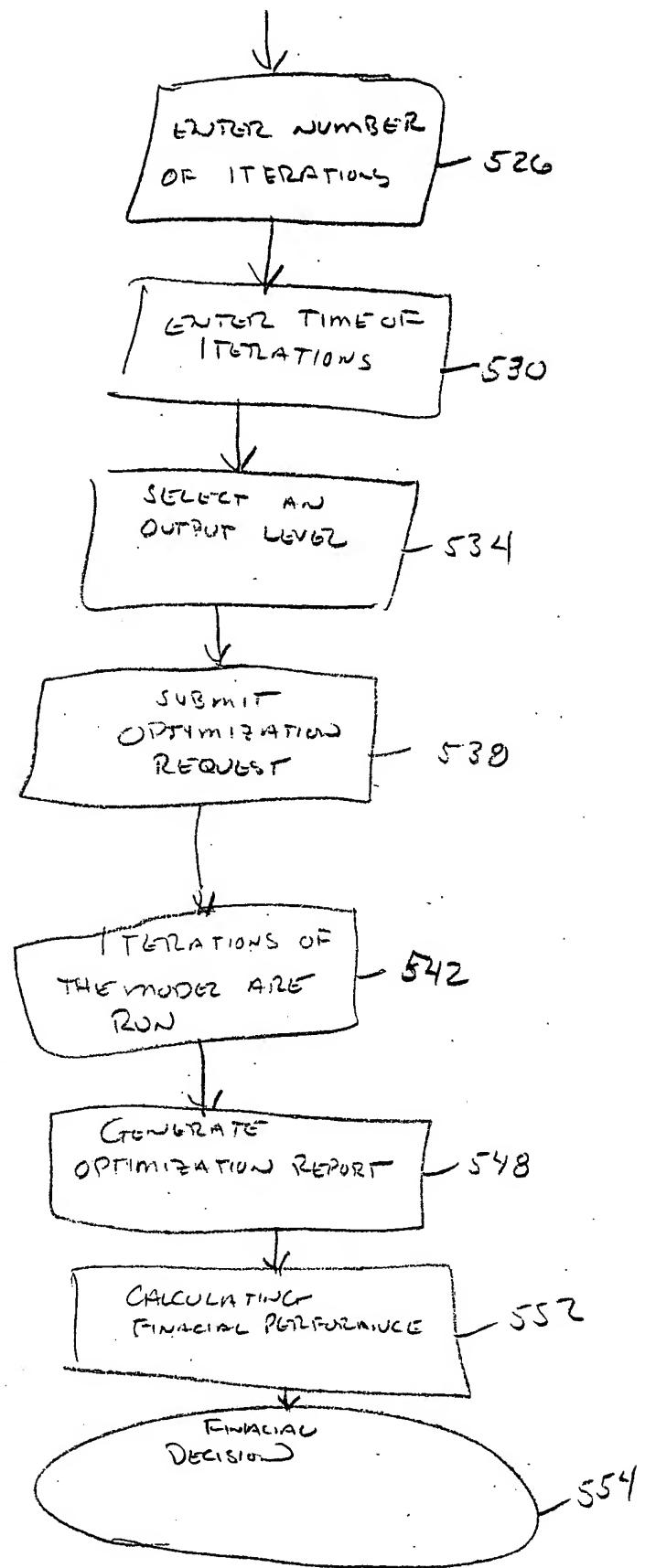


FIG. 31 B

Process steps 512, 514

Define Optimization for a Simulation Model: Microsoft Internet Explorer

Define a New Optimization

Simulation model:  Model  **498** Version: 2  **501**

Optimization name:  **602**

Object function: Utilization rate

Optimization direction: Maximize

Choose decision variables for arrival  **510**

Decision variable	Entity name	Location	Initial quantity
<input type="checkbox"/>	Van_53_Orders	Order_queue	1
<input type="checkbox"/>	Van_53	Ready_pool	120
<input type="checkbox"/>	Van_48_Orders	Order_queue	1
<input type="checkbox"/>	Storage	Ready_pool	45
<input type="checkbox"/>	Storage_Orders	Order_queue	1
<input type="checkbox"/>	Reffer	Ready_pool	5
<input type="checkbox"/>	Reffer_Orders	Order_queue	1
<input type="checkbox"/>	Flatbed	Ready_pool	63
<input type="checkbox"/>	Flatbed_Orders	Order_queue	1
<input type="checkbox"/>	Van_48	Ready_pool	185

**515**

**SUBMIT**

FIG. 32

Process steps 524, 526, 530, 534

Submit Optimization Request

Simulation model: Model Version: 2 Optimization Test

Objective function: Utility Rate

Define parameters for decision variables

Entity Name	Location	Start Value	Lower Bound	Upper Bound
Van_53	Ready_pool	160	140	180
Van_48	Ready_pool	80	60	100

Optimization stop criteria

Number of iterations: 100

Time of iterations: 200 minutes

Output level

Best solution only  All current best solution

Best solution every 5 iterations

**SUBMIT**

Fig. 33

Process Step 540

View Optimization Results - Microsoft Internet Explorer

## Optimization Report

### Model information

- Model name: Model
- Version: 2
- Optimization: Test
- Function: Utilization rate
- Direction: Maximize

### Decision variables

Entity Name	Location	Start Value	Upper Bound	Lower Bound
Van_53	Ready_pool	120	50	50
Van_48	Ready_pool	185	100	100

### Optimization output

Iteration	Object value	Van_53,Ready_pool	Van_48,Ready_pool
1	0.867049180327869	120	185
3	0.905509433962264	100	165
4	0.9123333333333333	50	100
8	0.914343434343434	93	105
14	0.923857868020305	50	147

Final Step

540

Process step 552

53" van	48" van	Utilization	total rental days a year	average units out per year	cost associated with changes in portfolio	Net unit revenue	Revenue change
120	185	0.867	264.435	96518.775	\$1,447,782	305	\$1,447,782
113	163	0.889	245.364	89557.86	\$1,343,368	-29	(\$104,414)
150	100	0.912	136.8	49932	\$748,980	-155	(\$698,802)
60	167	0.917	208.159	75978.035	\$1,139,671	-78	(\$308,111)
55	134	0.922	174.258	63604.17	\$954,063	-116	(\$493,719)

FIG. 35